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10/775,671	02/10/2004	Krzysztof Matula	LHUD-03701-US	1133
33794 7590 03/28/2008 MATTHIAS SCHOLL 14781 MEMORIAL DRIVE SUITE 1319 HOUSTON, TX 77079				
EXAMINER VU, TUAN A				
ART UNIT 2193		PAPER NUMBER		
NOTIFICATION DATE 03/28/2008		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/775,671

Applicant(s)

MATULA ET AL.

Examiner

Tuan A. Vu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/28/07.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

1. This action is responsive to the Applicant's response filed 12/28/07.

As indicated in Applicant's response, claims 1-4, 6-7, 11, 13 have been amended, and claim 14 added. Claims 1-14 are pending in the office action.
submitted for examination.

Specification

2. The disclosure is objected to because of the following informalities: the recital of 'declared as ROM memory' appears either a non-conformance to lexicographic and well-accepted meaning for 'declared'; or as a lack of description rendering interpretation of a RAM being proclaimed a ROM very difficult. Inasmuch as the Specifications, claims 1 and 7 also include this 'declared as' phraseology and along with the Disclosure **are also objected to**. The Disclosure as a whole lacks support in order to justify on the use of such language or to convey some insight that would help alleviate what appears to be unreasonable deviation from well-accepted meaning of the concepts implicated. The Specifications does mention 'that it is necessary to inform' a linker that addresses where the uncompressed data resides are permanent ROM type (Specs, pg. 10), i.e. not amounting to any utility performing any declaration. That is, the Specifications does not redefine or describe the 'declared' concept in terms to clarify as to what software/hardware entity/utility is involved for providing this declaration; nor does the Specifications support how a RAM would suddenly become an entity that should be treated as a ROM, lacking any implementation details in establishing such 'declaration' utility. First, for one skill in the art reading the Invention, lexicographic meaning has it that (i) *declaring* a entity entails setting up via definition or initialization a hardware/software structure (e.g. variable) in

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order for such structure to support usage of the object represented by said entity; (ii) a RAM memory entails that this dedicated portion of memory can be accessed, and written to in a speedy fashion, unlike a ROM where accessible data can reside for a long time, and usually cannot be written to. The Specifications is devoid of any (implementation) details that would explicitly describes a utility for (i) such as to reasonably enforce (e.g. via structural and definite details) the establishing of (ii); rendering the above 'declared as' phrase an unrealistic, non-credible and groundless form to convey a proper semantic.

Appropriate correction is required.

Claims Objections:

3. Claim 4 is objected to because of an extraneous 'a' between 'functions common to' and 'the decompressing'

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claim 7 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The Federal Circuit has recently applied the practical application test in determining whether the claimed subject matter is statutory under 35 U.S.C. § 101. The practical application test requires that a “useful, concrete, and tangible result” be accomplished. An “abstract idea” when practically applied is eligible for a patent. As a consequence, an invention, which is eligible for patenting under 35 U.S.C. § 101, is in the “useful arts” when it is a machine, manufacture, process or composition of matter, which produces a concrete, tangible, and useful result. The test for practical application is thus to determine whether the claimed invention produces a “useful, concrete and tangible result”.

The current focus of the Patent Office in regard to statutory inventions under 35 U.S.C. § 101 for method claims and claims that recite a judicial exception (software) is that the claimed invention recite a practical application. Practical application can be provided by a physical

transformation or a useful, concrete and tangible result. The following link on the World Wide Web is the United States Patent And Trademark Office (USPTO) reference in terms of guidelines on a proper analysis on 35 U.S.C. §101 rejection.

http://www.uspto.gov/wcb/offices/pac/dapp/opla/preognotice/guidelines101_20051026.pdf

Specifically, claim 7 recites a computer readable-medium storing instructions to perform the method comprising storing a loader, decompressing and copying. The Specifications mentions about a receiving environment like a television or a telephone (see pg. 7-8) wherein downloaded code can be decoded and stored in FLASH memory, and relevant transmission medium encompasses telecasted and broadcast signals. It is not clear whether downloaded code such as loader software is excluded from or belongs to signal format being telecasted or transmitted wirelessly to cell-phones, but, as claimed, 'computer-readable medium' encompasses all the above streamed, telecasted signal or downloaded form of data. Lacking specific as to what readable medium constitute, the claim in light of the above inclusion of wide type signal, amounts to a form of readable medium that also includes **non-tangible** medium such signal wave data. The claim therefore, cannot be categorized as any statutory subject matter; and further cannot be reasonably construed as a tangible apparatus that would materialize via tangible hardware embodiment the functionality of the method steps of claim 7, i.e. no generation of real-world Application result as being tangible, concrete and useful result.

The claim is rejected as non-statutory subject matter.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 5-10, 13-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Euroloader, “Technical Specification of a European Loader for Multimedia Terminals for Cable and Cable Modems”, December 2001, pp. 1-60 (hereinafter Euroloader).

As per claim 1, Euroloader discloses a data signal receiver programmed with a loader comprising:

a processor comprising a signal processing block (e.g. *main processor* – sec 1, pg. 10: Introduction), an initiating block (e.g. *starter* - sec 2.1.1, pg.13 -Note: starter with minimum update functionality reads on initiating code – see Fig. 2, pg. 18: starter, bootstrap) initiating the loader, and a loader control block (e.g. Modulo 0... executable code is the loader - pg. 21) servicing the loader based on a code initiated by the initiating block;

a signal-receiving block (see Fig. 4, layer structures - pg. 20-21; digital signal, NIT – Diagram 2, pg. 28);

data exchange interfaces linked to the processor (e.g. processor – Introduction, pg 10, top);

RAM memory, ROM memory, and NV-RAM memory linked to the processor (sec 3.4, pg. 17); and

non-volatile memory linked to the processor, wherein a decompressing program of the loader (sec 6.5, pg. 37 – Note: starter code stored in ROM to check integrity of downloaded loader – see sec 6.3, pg. 36; sec 6.4, pg. 37; sec 6.6, pg. 38 -- reads on decompressing program – as per MD5 checksum re-calculation -- see pg. 37, see Diagram 7, pg. 40) and the loader in a

compressed form are stored in the non-volatile memory (e.g. Fig. 6; Fig. 2;) and after being decompressed (see sec 6.5.2, 6.6, pg. 38; see Diagram 7, pg. 40; Diagram 8, pg. 42 – Note: checking whether a generated checksum matches a given MD5 checksum reads on regenerating a CRC – recalculating a checksum **inherently** entails CRC for data in decompressed form - from the decompressed data recently received to check its integrity, otherwise generating an error – see Diagram 7, pg. 40; sec 6.6, pg. 38) by the decompressing program, the loader is stored in a section of the RAM memory, the section being declared as the ROM memory (sec 5.7, pg. 26-27; *successfully verified ... loaded takes control ... ROM* - sec 6.2, pg. 35).

As per claim 5, Euroloader discloses wherein the loader's code after decompressing is located at a permanent address in the RAM memory (e.g. must start the update – pg. 35, bottom; *Start operational software* – Diagram 7, last step, pg. 40 – Note: loader after hash checked and starting in executable form intrinsically discloses executing from RAM – see Fig. 6, pg. 23).

As per claim 6, Euroloader discloses wherein the non-volatile memory is FLASH memory (FLASH – Diagram 7, pg. 40; Fig. 6, pg. 23).

As per claim 7, Euroloader discloses a method for updating software in a data signal receiver having a processor and data exchange interfaces, RAM, ROM, NV-RAM and non-volatile memories linked to the processor (refer to claim 1), the method comprising:

storing of software containing a loader in a compressed form in the non-volatile RAM memory (Fig. 6; Fig. 2; see Diagram 7-8, pg. 40-41; sec 6.6, pg. 38; Diagram 9, pg. 42); and upon initiating startup procedure (e.g. *starter* - sec 2.1.1, pg.13 -Note: starter with minimum update functionality reads on initiating code – see Fig. 2, pg. 18: starter, bootstrap),

decompressing the software containing the loader (see sec 6.5.2, 6.6, pg. 38; see Diagram 7, pg. 40; Diagram 8, pg. 41 – Note: checking whether a generated checksum matches a given MD5 checksum reads on regenerating a CRC from the decompressed data recently received to check its integrity, otherwise generating an error – see Diagram 7, pg. 40; sec 6.6, pg. 38), and

copying the software containing the loader to a permanent address in a section of the RAM memory (refer to claim 5), declared as ROM type memory prior to a software linking process (FLASH – Diagram 7, pg. 40; Fig. 6, pg. 23).

As per claims 8-10, Euroloader discloses wherein a startup procedure of the loader is executed upon connecting the data signal receiver to a power source (e.g. *starter ...bootstrap... main power* – sec 5.6, pg. 26; see Fig.2 pg. 18); wherein a startup procedure of the loader is initiated at a user's request (request from the customer – sec. 5.6); wherein a startup procedure of the loader is initiated by an external signal (e.g. processor reset, main power, from customer, from application software – sec 5.6; sec 5.8, pg. 27), transmitted to the data signal receiver.

As per claim 13, Euroloader discloses checking whether a software currently broadcasted (sec 1.2, pg. 11 – Note: Broadcast service by Euroloader to ensure that no registered terminal should operate with unsupported software by the provider entails broadcasting to all terminals of provider network of user – see Broadcast Descriptor – Diagram 3, pg. 29) in a data signal is meant for the data signal receiver (see sec 5.2.1 pg. 24; sec 5.2.2 pg. 25; *Descriptor* - Diagram 2-5, pg 28-30; Diagram 6, pg. 34), in which the loader has been initiated after initiating an application update procedure; and accepting the application update procedure when the

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program currently broadcasted in the data signal is meant for the data signal receiver, in which the loader has been initiated (sec 6, pg. 35-42; Diagram 7, pg. 40).

As per claim 14, refer to the terminal device performing the steps of claim 7.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Euroloader, “Technical Specification of a European Loader for Multimedia Terminals for Cable and Cable Modems”, in view of Defosse et al. USPubN: 2003/0097474 (hereinafter Defosse)

As per claim 2, Euroloader does not disclose wherein the signal processing block is connected to the data source through a GSM signal transmitting/receiving block and/or an external interface block. But at the time the invention was made, the use of firmware and flash memory for resources restraint devices like in Euroloader’s user terminal (see Introduction, pg. 10) for network distribution of update was well-known, and accordingly, Defosse, in a distribution network where Flash memory of remote devices can be used to store download in a compressed form (see Fig. 1-3) via communication with a server similar to Euroloader, discloses the terminal device being PDA, laptop or mobile phone operating within a WAP network or wireless network including a GSM (para 0031, pg. 3; para 0040, pg. 4). It would have been obvious for one skill in the art at the time the invention was made to implement the distribution of Euroloader so that the network to distribute compressed software to user’s terminal would be

a wireless network including a GSM for mobile telephony because this would enable the distribution technique by Euroloader to also encompass and support upgrade distribution of software to user when the wireless user's devices, enabling thereby Euroloader to scale its product applicability to more than one network distribution protocol in view of the communication capability and growth as explained in Defosse (BACKGROUND, pg. 1).

9. Claims 3-4, 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Euroloader, "Technical Specification of a European Loader for Multimedia Terminals for Cable and Cable Modems", in view of Tuttle, USPN: 5,325,377 (hereinafter Tuttle)

As per claims 3-4, Euroloader discloses wherein an memory image is created from a section containing a loader's booting sequence (e.g. bootstrap code – Fig. 2, pg. 18; Fig. 1, pg. 17), and a section containing a segment with loader's static data (descriptor, information, pointer, InfoBytes, InfoIndication - sec 4.3, pg. 20) as well as associating CRC with DDB of downloaded data being checked for integrity (see pg. 22; sec 7.8 pg. 50-51) and loader's code (e.g. Fig. 1, Flash pg. 17 -- Note: loader software downloaded stored in FLASH along with info data combined with starter code -- as per section 2.1.1, pg 12; new software ... during download - sec 3.4, para 2-- reads on memory image containing fix information code, starter code and loader code) wherein the memory image is stored in non-volatile memory in a compressed form (e.g. *verify hash of the entire ... image* – sec 4.3, pg. 23)

But Euroloader does not explicitly disclose image containing a section containing a loader's *jump table*, wherein the loader's jump table contains addresses of functions common to the decompressing program and the loader, the functions are defined in the decompressing program. The concept of checking integrity by decompressing data to regenerate a checksum in

order to match it against a received CRC is clearly taught in Euroloader (refer to Diagram 7-9, pg. 38-42; sec 6.6 pg. 38). And tabular address information from descriptor structure (e.g. sec 7.1, pg. 43-44; sec 7.7.3 -7.8, pg. 50-51) to support integrity-checking of DDB sections of received data (see pg. 22) is shown via Euroloader's use of CRC to validate of DSM Carousel descriptors (see sec 7, pg. 43-51), while technology of embedded processing system with booting via a loader has been a well known concept at the time the invention was made. Tuttle, in a paradigm of inter-communication wherein a video processing subsystem receiving from a host firmware --analogous to Euroloader's terminal device receiving flash-bound software in a encrypted form-- discloses using verifying of the downloaded video image for integrity and using initialization routines (e.g. Fig. 3-4; jump table - col. 12, line 66 to col. 13, line 40; col. 12, li. 24-48) with modification of address in a 'jump table' associated with the routines dynamically with the state of the integrity checking and initialization routines. Based on table usage to support address in checking received DDB sections as mentioned above, as well as the descriptor and pointer information provided in the download software in the FLASH by Euroloader (see Euroloader: sec 4.3 - pg. 20-21; sec 7.8 ... *Compressed_module_descriptor* - pg. 51) whereby linkage to the main loading of the initiation program can be checked for integrity (see Euroloader: Diagram 2-9; sec 6, pg. 35-42) and the analogous usage of boot loader in embedded system approach by Euroloader's modem, it would have been obvious for one skill in the art at the time the invention was made to implement a *jump table* in the FLASH and enabling in the verification process by Euroloader, so that such table includes jump address to a verification software section for performing hash verification, or decompressing downloaded modules. One of ordinary skill in the art based on the known practices in embedded system,

would be motivated to do so because that Euroloader's use of pointer referencing or address table in the course of descriptor mapping/CRC verifying in the purport of loading of properly checked code in RAM can effectuate the dynamically relocating of branch address (via a jump table) during such verification, as exemplified by Tuttle, and thereby enabling proper verification of FLASH and alleviate linkage resources to the main program in RAM via dynamically adjustment of branch/jump addresses as set forth above.

As per claims 11-12, refer to the rationale addressing the jump table limitation in claims 3-4.

Response to Arguments

10. Applicant's arguments filed 12/28/07 have been fully considered but they are not persuasive. Following are the Examiner's observation in regard thereto.

35 USC § 102 Rejection using Euroloader:

- (A) Applicants have submitted that the use of MD5 for effectuating integrity checking of the loader by Euroloader is not teaching 'decompressing' as recited as a requirement in claim 1, particularly when 'integrity checking' represents merely a checking option that is not the same as decompressing (Appl. Rmrks pg. 6, top, middle). The Office Action has now clearly pointed out how hashed portions of the received segments of the loader package are verified and validated using comparison of regenerated checksum against the CRC associated with the above segments. The well-accepted practice to realize integrity check (as exemplified in Euroloader) is to regenerate a CRC corresponding to the hashed data of the (received) package whose integrity is to be verified; that is, this process restores a full decompressed portion corresponding to the hashed data and based on the regenerated checksum for said decompressed portion, perform a

comparison between the (received data) checksum accompanying the above hashed data, and the regenerated latest checksum (see Office Action). The *decompressing* is integral to the process of regenerating a CRC in order to validate the CRC coming from the package received. The argument is not deemed persuasive as a result of the above. Besides, the argument is based on a newly added limitation, and is not commensurate with the previous Office Action. This alone can render the arguments non-applicable and utterly **moot** (emphasis added) in light of the new grounds of rejection that are herein specifically purported to address the claim's changed scope and added limitations.

(B) Applicants have submitted that uncompressed loader are stored in permanent address as per the invention, and Euroloader does not teach adding decompression to the loader, nor does Euroloader teach 'RAM ... declared as ROM' (Appl. Rmrks pg. 6, bottom). Based on the analysis provided in section (A), it is deemed that Euroloader's decompressed and validated portions of the downloaded loader code has been referred to in the Office Action as being stored in ROM or Flash; while the 'declared as' limitation has been given little or no patentable weight because of the impropriety in syntax use as addressed in the Objection to the Disclosure.

(C) Applicants have submitted that (Appl. Rmrks pg. 7) the Office's proffering of FLASH to map the 'RAM ... declared as ... ROM' limitation is not anticipating this limitation; and that Euroloader does not teach 'decompressing the software containing the loader' as required by claim 7 or claim 1. It is noted that the process of validating the software package by Euroloader encompasses validating all segments or messages contained in the downloaded package, including software containing the very loader (refer to rejection). The argument about Euroloader not teaching 'declared as ROM' and 'decompressing' would have to be referred back

to sections A and B above. In all, Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references; and where there is a rejection by virtue of obviousness, Applicants contend with mere allegation that one feature is not anticipated by one reference, when in fact, it is required that the argument should establish how the combination of teachings would fail, with those teachings taken separately and jointly, to render a specific claimed limitation obvious.

In all, the claims will stand rejected as set forth in the Office Action.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A Vu whose telephone number is (571) 272-3735. The examiner can normally be reached on 8AM-4:30PM/Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lewis Bullock can be reached on (571)272-3759.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-3735 (for non-official correspondence - please consult Examiner before using) or 571-273-8300 (for official correspondence) or redirected to customer service at 571-272-3609.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Tuan A Vu/

Primary Examiner, Art Unit 2193

March 20, 2008

Application Number**Application/Control No.**

10/775,671

Examiner

Tuan A. Vu

**Applicant(s)/Patent under
Reexamination**

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